Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering 258

More information about this series at http://www.springer.com/series/8197

Jun Zheng · Wei Xiang
Pascal Lorenz · Shiwen Mao
Feng Yan (Eds.)

Ad Hoc Networks

10th EAI International Conference, ADHOCNETS 2018
Cairns, Australia, September 20–23, 2018
Proceedings

Springer

Editors
Jun Zheng
National Mobile Communications Research Laboratory
Southeast University
Nanjing, China

Wei Xiang
College of Science and Engineering
James Cook University
Cairns, QLD, Australia

Pascal Lorenz
IUT
University of Haute Alsace
Colmar, France

Shiwen Mao
Department of Electrical and Computer Engineering
Auburn University
Auburn, AL, USA

Feng Yan
National Mobile Communications Research Laboratory
Southeast University
Nanjing, China

ISSN 1867-8211 ISSN 1867-822X (electronic)
Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering
ISBN 978-3-030-05887-6 ISBN 978-3-030-05888-3 (eBook)
https://doi.org/10.1007/978-3-030-05888-3

Library of Congress Control Number: 2018964126

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

An ad hoc network is a wireless system for a specific purpose, in which mobile or static nodes are connected using wireless links and dynamically auto-configure themselves into a network without the requirement for any infrastructures such as access points or base stations. Ad hoc networking covers a variety of network paradigms, including mobile ad hoc networks, sensor networks, vehicular networks, unmanned aerial vehicle (UAV) networks, underwater networks, airborne networks, underground networks, personal area networks, device-to-device (D2D) communications in 5G cellular networks, and home networks etc. It promises a wide range of applications in civilian, commercial, and military areas. In contrast to the traditional wireless networking paradigm, this new networking paradigm is characterized by sporadic connections, distributed autonomous operations, and fragile multi-hop relay paths, which have introduced many formidable challenges, such as scalability, quality of service, reliability and security, and energy-constrained operations. Thus, while it is essential to advance theoretical research on fundamental and practical research on efficient architectures and protocols for ad hoc networks, it is also critical to develop useful applications, experimental prototypes, and real-world deployments to achieve immediate impacts on the society for the success of this wireless networking paradigm.

The annual International Conference on Ad Hoc Networks (AdHocNets) aims at providing a forum to bring together researchers from academia as well as practitioners from industry to meet and exchange ideas and recent research work on all aspects of ad hoc networks. As the tenth edition of this event, AdHocNets 2018 was successfully held in Cairns, Australia, during September 20–23, 2018. The conference featured one keynote speech, by Dr. Guoqiang Mao from the University of Technology Sydney (UTS), Australia. The technical program of the conference included 27 regular papers that were selected out of 50 submissions through a rigorous review process.

This volume of proceedings includes all the technical papers that were presented at AdHocNets 2018. We hope that it will become a useful reference for researchers and practitioners working in the area of ad hoc networks.

November 2018

Jun Zheng
Wei Xiang
Pascal Lorenz
Shiwen Mao
Feng Yan

Organization

Steering Committee

Imrich Chlamtac	University of Trento, Italy
Shiwen Mao	Auburn University, USA
Jun Zheng	Southeast University, China

Organizing Committee

General Chair

Jun Zheng	Southeast University, China

TPC Chair and Co-chairs

Wei Xiang	James Cook University, Australia
Pascal Lorenz	University of Haute-Alsace, France
Shiwen Mao	Auburn University, USA

Local Chair

Ickjai Lee	James Cook University, Australia

Workshops Co-chairs

Nirwan Ansari	New Jersey Institute of Technology, USA
Weixiao Meng	Harbin Institute of Technology, China

Publicity and Social Media Co-chairs

Yonghui Li	University of Sydney, Australia
Nathalie Mitton	Inria, Lille-Nord Europe, France
Baoxian Zhang	University of Chinese Academy of Sciences, China

Publications Chair

Feng Yan	Southeast University, China

Web Co-chairs

Bingying Wang	Southeast University, China
Yuying Wu	Southeast University, China

Conference Manager

Andrea Piekova	European Alliance for Innovation

Technical Program Committee

Hamada Alshaer	University of Edinburgh, UK
Jalel Ben-Othman	Université de Paris 13, France
David Brown	Defence Research and Development, Canada
Claude Chaudet	Telecom ParisTech, France
Yin Chen	Keio University, Japan
Omer Farooq	University College Cork, Ireland
Antoine Gallais	Université de Strasbourg, France
Shuai Han	Harbin Institute of Technology, China
Changle Li	Xidian University, China
Pascal Lorenz	University of Haute Alsace, France
Shiwen Mao	Auburn University, USA
Nathalie Mitton	Inria Lille – Nord Europe, France
Amiya Nayak	University of Ottawa, Canada
Symeon Papavassiliou	National Technical University of Athens, Greece
Joel Rodrigues	University of Beira Interior, Portugal
Alex Sprintson	Texas A&M University, USA
Marc St-Hilaire	Carleton University, Canada
Zhi Sun	State University of New York at Buffalo, USA
Kun Wang	Nanjing University of Posts and Telecommunications, China
Kui Wu	University of Victoria, Canada
Wei Xiang	James Cook University, Australia
Feng Yan	Southeast University, China
Jie Zeng	Tsinghua University, China
Baoxian Zhang	University of China Academy of Sciences, China
Sihai Zhang	University of Science and Technology of China, China
Yuan Zhang	Southeast University, China
Jun Zheng	Southeast University, China
Sheng Zhou	Tsinghua University, China

Contents

Security

Miscellaneous Topics in Wireless Networks